

species of algæ this little manual of the New England species will prove a most welcome volume. They will find in the chapter on the structure and classification facts that were not known in Harvey's day, and which, here collected for them within a brief space, they would otherwise have to search for in the writings of Thuret, Bornet, Janczowski, Rostekinski, Pringsheim, or Reinke.

The Berries and Heaths of Rannoch. (London: G. Bell and Sons, 1881.)

THE berry-bearing plants here described and delineated are eight, viz. *Vaccinium oxycoccus*, *V. Myrtillus*, *V. uliginosum*, *V. vitis Idæa*, *Arctostaphylos uva-ursi*, *A. alpina*, *Empetrum nigrum*, and *Rubus chamaemorus*, all of which do not, strictly speaking, come within the geographical limitation of the title-page. The heaths are three only in number, viz. the common *Erica cinerea* and *Tetralix*, and *Calluna vulgaris*, to which are added two other nearly allied species not actually found within the district, *Andromeda polifolia* and *Loiseleuria (Azalea) procumbens*. In the letterpress it is not to be expected that anything new could be added to what is already known about these plants; but in an appendix is given a list of the Gaelic names of the various species supplied by the editor of the *Scottish Naturalist*. The coloured plates are exceedingly good and characteristic; but surely it should have been stated that they are taken from Sowerby's "English Botany." The volume is a pretty one to lie on the drawing-room table. A. W. B.

Lehrbuch der Mineralogie. Von Dr. G. Tschermak. I. Lieferung. (Wien: Alfred Hölder, 1881.)

IT is with great pleasure that we have received this instalment of Prof. Tschermak's work, and also learnt from the publisher's introductory note that the rest of the book may be expected during the course of a year. The work is sketched somewhat on the lines of Naumann's well-known "Elemente der Mineralogie," but follows Miller's Mineralogy in the wider scope given to mineral physics. The present number is introductory, and treats of descriptive crystallography, crystal-structure, general mineral physics, and includes a considerable portion of mineral optics. In the crystallography the Millerian notation and the stereographic projection are employed, and the systems are developed from the principle of symmetry in a clear and simple manner. Prof. Tschermak has adopted the four-plane axial system in the rhombohedral system, which is sometimes designated the Bravais-Miller system. Possibly this may appear to non-mathematical students simpler, and may to a certain extent be more easily mastered, but we feel sure that in its practical application to crystallographic problems it does not possess either the elegance or conciseness of the three-plane axial system selected by Prof. Miller. We feel also that it is most unfair to Prof. Miller's memory to attach his name, even in a double-barrelled way, to a system which he steadily refused to adopt. The theories and facts of twin and mimetic crystals are carefully expounded. These constitute a branch of mineralogy which has become of the utmost importance since the application of the microscope in the investigation of the optic properties of minerals. Other sections, which are especially good, are those on mineral inclusions, on the hardness and etching of crystal faces. These contain a large amount of information which is rarely to be found except by a laborious search through scientific periodicals. The book is divided into sections, each dealing with its separate subject, and at the end of each section is a list of the more important literature of the subject. The work so far is excellent, and if, as we have every reason to expect, it be carried through in an equally satisfactory manner, we shall possess a text-book in keeping with the reputation of its author and worthy of the school to which he belongs. W. J. LEWIS

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Panizzi and the Royal Society

THE "Life of Panizzi" by his friend and colleague, Mr. Louis Fagan,¹ is marked by a tone of indiscriminate adulation which disfigures many specimens of modern biography. The hero is perfect, and they who think otherwise are dismissed with words of contempt, or are admonished to go and meditate on their wicked ways and then return in repentant mood to the community of hero-worshippers.

In the Royal Society's treatment of Panizzi, Mr. Fagan endeavours to justify another example of the wolf and the lamb, although it must be owned that in the pamphlets² from which the biographer quotes, the lamb's bleatings are sufficiently energetic to lead to the conclusion that he thought himself a match for the wicked wolf.

Mr. Fagan thinks it important "that Panizzi's stormy connection with the Royal Society should be fairly and impartially" stated; although how this can be done without hearing both sides he forgets to say; and yet he professes to give "the proper elucidation of the facts," "the whole circumstances of the case thoroughly weighed and dwelt upon"; how successfully he opposed "the force with which it was attempted to crush the evidence of his superior talent" (vol. i. p. 119), and although "thwarted and impeded at every step, Panizzi at last succeeded in once again proving that right can contend successfully with might" (vol. i. p. 130).

The reader will gain a very lop-sided idea of this quarrel if he trust to Mr. Fagan's account alone; and as in the reviews of this book no one has attempted to ascertain the truth of the matter (which indeed could not be done without access to the Royal Society's papers), I venture, as a member of the present Library Committee, to state the case from the other side, being naturally anxious to sustain the reputation, so unjustly assailed, of a former committee which contained the honoured names of Baily, Beaufort, Children, Greenough, Lubbock, Murchison, Peacock, Roget, and others.³

To make a long story short, it is sufficient to state that about the year 1832 the Royal Society wished to bring out a complete catalogue of the books, &c., in its library. As a preliminary step, a list of the mathematical books was compiled and set up in type as a specimen of the kind of work required. In the words of a Council minute, the sheets were "not designed for publication," they being "in a very rough and unfinished state."

In October, 1832, Dr. Roget meeting Mr. Panizzi at dinner, informed him of the Society's intention, and requested him to look over and revise the sheets in question, together with others that might afterwards be forthcoming. This was agreed to, and the first sheets were forwarded to Panizzi, who found so many errors in them that, as he informed Dr. Roget, "although I would never attempt to correct what had been already done, I was ready to undertake a new compilation."

Accordingly on October 16, 1832, the Library Committee resolved to recommend to the Council that Mr. Panizzi be engaged to make a new catalogue according to the mode to be agreed upon by the Committee, he to be paid 30*l.* for every thousand titles, the whole remuneration, however, not to exceed 500*l.*

¹ "The Life of Sir Anthony Panizzi, K.C.B." By Louis Fagan. Two vols., 8vo, 1880.

² "A Letter to H.R.H. the President of the Royal Society, on the New Catalogue of the Library of that Institution now in the Press." Pp. 56 and 37. Signed A. Panizzi, and dated January 28, 1837. The last three pages contain a postscript letter to the President, dated November 4, 1837, and a note in which it is stated that the pamphlet was not put into circulation until the latter date, in order that H.R.H. might have an opportunity of replying to it.

³ The President, not having availed himself of this opportunity, the second pamphlet was put forth. It is entitled "Observations on the Address by the President, and on the Statement by the Council to the Fellows of the Royal Society respecting Mr. Panizzi, read at the general meeting, November 30, 1837." Pp. 24. Dated December 22, 1837.

⁴ Strictly speaking there were three committees, namely, one for the catalogue, a second for the library, and a third for deciding in doubtful cases under what division a book should be placed in the new catalogue.

Panizzi agreed to these terms, and offered "to wait on the Committee, as soon as convenient to them, to settle the manner in which they wish the work to be executed."

Now the whole gist of this quarrel consists in this, that the Library Committee naturally wished to control Mr. Panizzi in his mode of executing the work, while he refused to be controlled or interfered with in any manner. He even regarded as personal enemies all those who attempted so to interfere. He fancied that every one who differed from him was actuated by a sense of personal dislike. When he refused Dr. Roget's request to revise the sheets of the Catalogue, he says (p. 6): "I had no idea when I so candidly expressed my opinion that I was making a powerful and unrelenting enemy in one of the most influential officers of the Royal Society." At p. 51 he says: "so gratuitous an insult would never have been allowed had not Mr. Bailey filled the chair at that meeting." And again (p. 5), "My statements will be received with derision by those who know that they may be unjust with impunity." At p. 18 he charges the Committee with "indelicate conduct," at p. 22 with "absurdity," at p. 25 such things were done "purposely to annoy me;" and again, "No suggestion of mine would ever be attended to by the Council." At p. 26 his work was regarded with "a malignant eye;" at p. 28 "The annoyance was incessant," "injurious and unjust;" at p. 33, "treating me as if I were their servant," "unwarrantable liberty;" p. 38, "unjustly interfered with;" p. 41, "insulted with an order of submitting my work to revision. . . I shall never consent for any one, be he who he may, to make any alterations in it." And when, on June 24, 1836, he was requested to attend the Library Committee on the following Monday at 4 p.m., he declined on the ground that "when I attended before I was not so well satisfied with my position as to wish to be in it again." At p. 54, when clamouring for payment of an unascertained balance which he claimed, he charges the Council with not meaning "to pay it unless they be compelled to it. . . . Possibly there is some legal means of obtaining redress; but in a country like this justice is not a luxury for a poor man to indulge in; and the Council, having at their disposal the funds of the Royal Society, can amuse themselves without personal trouble or loss with a law-suit which I have not the means of sustaining." Will it be believed, in the face of such language as this that Panizzi had already been paid the sum of 450*l.*, and his whole remuneration was not to exceed 500*l.*

In his second pamphlet (p. 18), after charging the Council with not meaning to act fairly, he hurls at it his "unmixed disgust and contempt." But I cannot help thinking that these vigorous epithets would have been more appropriate had they travelled the other way.

When requested to return the printer's revises, and he refused on the ground that they were his own property, together with the key of a drawer in one of the Royal Society's rooms, and he also refused, what wonder that, after so long a contest with this cantankerous man, the Council should have resolved on July 14, 1837, "that Mr. Panizzi be no longer employed in the formation of the Catalogue."

The reader may well exclaim by this time, What *is* all this hubbub about? Simply this: Mr. Panizzi insisted on adding to some of the items of the Catalogue original comments of his own, to which the Library Committee justly objected as committing the Society to opinions of doubtful value. Panizzi attached the greatest importance to these notes and comments. "The Committee, far from objecting to them, ought to have been thankful that I had taken the trouble of introducing them" (p. 31); and he proceeds to quote specimens illustrative of this part of his work. For example, he says: "To the 'Mémoires' of Charnières on the observations of the longitude, I added this note: 'All the author's additions and corrections carefully put in by J. B.' This note is on the title-page of this copy, and the volume is interspersed with alterations in manuscript. I suppose J. B. to mean James Bradley." Later on in the same page he adds: "The author's additions, if put in by Bradley, are, of course, of much more value than if written by any other J. B."

Now the book in question is only a single *Mémoire* of De Charnières, not a collection of "*Mémoires*," as described by Panizzi. Moreover, there are five reasons why the additions and corrections could not have been written in by Dr. Bradley.

1. He died five years before the memoir by Dr. Charnières was published. This may well excuse the other four reasons, but they are curious as illustrating the carelessness of a man who was convinced of his own infallibility.

2. The writing of the anonymous J. B. is small and neat: that

of Bradley large and awkward. The Royal Society had in its possession manuscripts of Bradley and his signature, which could be seen by merely asking the assistant-secretary for them, and yet Panizzi did not submit the writing of J. B. to this simple test.

3. Bradley was not in the habit of writing in his books.

4. The so-called "additions and corrections" are simply the corrigenda collected into eight pages at the end of the book, and transferred in MSS. to the text, a fidgety piece of work, not likely to be undertaken by so busy a man as Bradley.

5. At the end of the book J. B. drops his incognito and appears as *J. Bevis*, a fact overlooked by Panizzi.

Other similar examples might be given, and indeed were submitted to the Fellows of the Royal Society at the time, in order to justify the resolution of the Library Committee "that all comments or notes expressing matters of opinion on the articles in the catalogue be omitted"; but the statement of them would occupy too much space, dealing as they do with details which unless given in full would not be understood.

Mr. Panizzi was undoubtedly a vigorous clever man; but in the matter of books, he, unfortunately for his own reputation, aspired to universal knowledge which belongs to no one. The gold of a universalist is apt to shrink down into dross when tested in the crucible of a specialist. Having occasion to consult a book by Gay-Lussac, and not finding it in the Catalogue of the British Museum Library, the attendant requested me to write the name and title on a slip and show it to Mr. Panizzi. No sooner had he glanced at the slip than he exclaimed "Ah! you have made a mistake: it is *Guy-Lussac*!" This readiness on all occasions to say something apparently to the purpose, may impress subordinates with a sense of power on the part of their chief, but to tell a chemist that *Gay-Lussac* is *Guy-Lussac* would be much the same as telling him that potash and soda are identical compounds.

C. TOMLINSON

Highgate, N., August 2

The Oldest Fossil Insects

In a paper on "The Devonian Insects of New Brunswick" (*Bull. Mus. Compar. Zoology*, 1881, vol. viii. No. 14) I have drawn attention to the fact that a fern on the same slab with *Platophemera* was determined in 1868 by Prof. Geinitz as *Pecopteris plumosa*, and therefore the slab considered by him as belonging to the Carboniferous. I believed that here an important gap was still to be filled, namely, the reliable determination of the fern, which is not mentioned in Mr. S. H. Scudder's monograph, nor in Principal Dawson's note on the geological relation of those insects, which closes Mr. Scudder's paper.

A paper by Mr. Dawson (*Canad. Naturalist*, 1881, vol. x. No. 2) is intended to fill this gap. The fern is after the study of the original specimen determined as *Pecopteris serrulata*, and said to be a common species in those beds. If I am not entirely mistaken it will be difficult to agree with Mr. Dawson's opinion (*l.c.* p. 2) "that doubts and suspicions thus cast on work carefully and exhaustively done should not seriously affect the minds of naturalists," as it happens that in his work of 1880 this common species is not quoted at all among the plants found in those beds, except in a note (p. 41) stating that in the beds 6 to 8 three or four other species occur, among them *probably P. serrulata*. Mr. Dawson quotes for the species the figures 207 to 209 in his Report of 1870, but I confess to be unable to recognise the *Platophemera* fern in those figures.

Prof. O. Heer has kindly drawn my attention to his "Flora Fossilis Arctica of Bear Island, Spitzbergen, 1871." He has given (pp. 14, 15) a detailed review of the fossil plants from St. John's, New Brunswick, and, as he still believes, has proven that those layers do not belong to the Devonian but to the Ursa stage of the Lower Carboniferous. This important and elaborate statement is disposed of by Mr. Dawson, as far as I know, only in his report, 1873, p. 8, in the following words:—"The so-called Ursa stage of Heer includes this (Lower Carboniferous), but he has united it with Devonian beds, so that the name cannot be used except for the local development of these beds at Bear Island."

It is true that Mr. Dawson, in the supplement to the third edition of the "Acadian Geology," 1878, p. 72, has tried to explain the different opinion of Prof. Heer by the earlier introduction of the Palæozoic flora in American formations. But this fact, known by every one, and of course by Prof. Heer, is not considered by him to be a sufficient objection to the statements given in the "Flora of Bear Island."

The paper of Prof. Heer states carefully and exhaustively the